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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

MATTHEW R. HYRE ET AL : Art Unit: 1731

Serial No: 10/005,682 : Examiner: Carlos N. Lopez

Filed: December 5, 2001 : Docket No: 5356-05

For: GLASS CONTAINER FORMING MACHINE

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Sir:

BRIEF ON APPEAL

Three copies of this brief are submitted. The fee for the Brief on Appeal has previously been paid. Should any other fee be required, please charge Deposit Account No. 50-0696 for same.

(1) Real Party In Interest

This application has been assigned to Emhart Glass SA which is a wholly owned subsidiary of Bucher Industries SA.

(2) Related Appeals and Interferences

A Notice of Appeal was filed on October 26, 2005, in a related application Serial No. 10/005,567, filed December 5, 2001.

(3) Status of the Claims

This appeal is from a final rejection dated June 2, 2004 and concerns rejected independent claims 1 and 4 and rejected dependent claim 2. Claim 3 stands allowable. This appeal will stand on claim 1. Claims 2 and 4 will either stand or fall with claim 1.

(4) Status of Amendments

No amendment was filed in response to the final rejection. Applicant has caused confusion in this case for which he apologizes. The facts follow:

1. The first Office Action was issued on September 29, 2003;

2. The first amendment was mailed on January 29, 2004, and was received by the Patent Office on February 10, 2004;

3. The Final Office Action responding to the amendment filed on February 10, 2004, was issued on June 2, 2004;

4. The Notice of Appeal was mailed on October 4, 2004.

5. The Brief on Appeal was filed on December 16, 2004.

6. Applicant received two papers from the Patent Office on April 21, 2005, more than seven months following the filing of the Notice of Appeal: A. One paper citing brief informalities requiring a new brief and B. A second paper which said that an amendment had not placed the application in condition for allowance.

7. Applicant did not pay a lot of attention to the second paper since the brief had been filed and he knew that the claims had not been allowed. Responsive to the first paper applicant filed the Brief on Appeal (Second Sending).

8. Applicant received a letter from the Patent Office dated August 9, 2005, which referred to an amendment after final, which had not been referred to in the brief.

9. Applicant filed a Brief on Appeal (Supplemental to Second Sending) on August 30, 2005 saying that he was unaware of filing an amendment after the final rejection.

10. The Patent Office issued a paper dated October 28, 2005, which enclosed a copy of an Amendment dated August 18, 2004, which was received by the Office on August 20, 2004.

The confusion concerns this Amendment which was received by the Office on August 20, 2004. This amendment had four pieces of data on its first page:

1. Docket No. 5352-05 - This is not the docket number of this case on appeal (this amendment had been placed by applicant's attorney in his docket 5352-05 where it belonged);

2. The document was headed AMENDMENT and was clearly an amendment to a first office action; an amendment at this time in this case on appeal would have been an AMENDMENT AFTER FINAL.

3. The second paragraph stated that the amendment was responsive to an Office Action dated April 21, 2004. Again, this was a response to the first office action, not a final amendment responding to a final office action. There is no office action, of that date, in this case on appeal;

4. Serial No. 10/005,682 - this is the serial number of this case on appeal.

Three pieces of information indicated that this paper did not belong in this file. One piece of information conformed to this file. In short, this amendment was for another case and was erroneously directed to this case because of an incorrect serial number. Because this error was not noticed by the office or applicant's attorney, the other case, which was to receive this misdirected amendment, became abandoned (it has been reinstated). With these facts, applicant continues to act on the basis that no amendment was filed post final rejection, in this case on appeal.

(5) Summary of Invention

A. DESCRIPTION OF INVENTION

The present invention relates to the formation of glass bottles in an I.S. machine. A glass parison is formed from a gob of molten glass in a blank mold and is then transferred into a blow mold. A parison is a solid rod of glass having the bottle finish formed at one end with a long hole extending into the parison through the finish. A blow head (18/page 5, line 2/Fig. 1), which has a blow tube (36/page 5, line 17/Fig. 2), is displaced from a remote position to a position where it rests on top of the blow mold (12/page 5, line 10/Fig. 2), which locates the blow tube in its correct bottle blowing location and the blow head is then connected to a pressurized air supply (27/page 5, line 12/Fig.2) to blow the parison into the shape of the blow mold (the shape of the bottle being formed). This pressure almost immediately blows the parison into a bottle. Pressure continues to be applied and airflow into and from the mold continues through a controlled exhaust in the blow head.

Before blow molds can be opened and the bottle removed and displaced to the next location in the process, the surface of the bottle must be cooled or chilled sufficiently so that the chilled bottle will be rigid for such displacement. Heat is transferred from the outer surface of the bottle via contact with the molds and the rate of cooling can be increased by cooling the molds. The internal surface of the formed bottle is cooled by the air flowing from the blow head into the mold and out from the blow head exhaust (42/page 5, line 23/Fig. 2). When the bottle is ready for transfer, the blow head (and blow tube) retract to a remote position, the molds open and a takeout (140, page 10, line 26/Fig. 13) is lowered to grip the bottles and transfer them to a deadplate (240, page 13, line 8/Fig. 16.

B. CLAIM 1 WITH SPECIFICATION REFERENCES AND COMMENTS

Presented below is the sole claim herein being reviewed with index numbers and references to the specification added:

1. A blow head mechanism for Blowing a parison in a blow mold of a blow station of an I.S. machine and cooling the blown parison so that a bottle will be formed which can be removed from the blow station comprising	A blow head mechanism (10/page 4, line 36) blows a parison into the bottle mold form defined in a blow mold
a blow head assembly,	18/page 5, line 2

support means for supporting said blow head assembly,	an arm 16/page 5, line 1, supports the blow head assembly. This arm is routinely called a support and thus "support means" specifically defines this structure. The same generic structure was disclosed more than 80 years ago, and in fact, the cited Rodriquez-Wong patent uses the phrase "support structure" which is the same thing as support means.
first displacement means for displacing said support means to displace said blow head assembly between a remote up position and an advanced down position,	22/a motor - page 5, line 3 - which has a controlled displacement (C, page 5, line 11) and is coupled to the support means.
said blow head assembly including a blow tube selectively displaceable between an up position and a down position,	18/page 5, line 2, 36/page 5, line 17, the blowtube is displaced via a threaded connection 76/96, page 8, lines 2 and 4 - as disclosed, the up position is the position at which the parison is blown into a bottle and the down position is a position below the up position which is selected for cooling purposes.

second displacement means for displacing said blow tube from the up position down to the down position and then back up to the up position at least one time during the time the parison is blown and cooled,	104/motor, page 8, line 5 which has a controlled displacement and which is coupled to the blow tube.
said blow tube being open at the bottom,	36/page 5, line 17
an air deflector having an annular, concave surface terminating at the top with a vertically extending post for deflecting air traveling axially down the blow tube uniformly radially outwardly and	(116/page 8, line 16)
a supporting frame for supporting said air deflector proximate the open bottom of said blow tube.	112/page 8, line 15

C. THE DIRECTION OF THE PRIOR ART

Applicant has provided numerous references and the Examiner cites Foster, Hayes, Ueda, Lowe and Mongan which relate to this technology - all show a blow tube that is stationary during the blowing and cooling of a parison into a bottle. All, except Foster, show straight down injection of cooling air. Foster, like the numerous references cited by applicants, show a variety of nozzles intended to create a swirling of the airflow to enhance cooling.

D. APPLICANTS' DEPARTURE FROM THE DIRECTION OF THE PRIOR ART

Applicant has found that maximum cooling will take place if the bottom of the blow tube has

"an air deflector having an annular, concave surface terminating at the top with a vertically extending post for deflecting air traveling axially down the blow tube uniformly radially outwardly" and

if the blow tube is displaced

"from the up position down to the down position and then back up to the up position at least one time during the time the parison is blown and cooled".

(6) Issues

The sole issue is whether the examiner's rejection of claim 1 as obvious over Rodriquez-Wong in view of Virog, is in error.

(7) Grouping of the Claims

Only claim 1 is in issue in this appeal. Claim 1 is representative of claim 4 and claim 4 will stand or fall with claim 1.

(8) Argument

I. Rodriquez-Wong

Rodriquez-Wong discloses a traditional blow head that has a blow tube, which is open at the bottom. As the blow head is

lowered into operating position, the blow tube, which can be located either at an up position or a down position, is simultaneously lowered to its down position. The "down" position is the position where the parison will be blown into a bottle. Throughout the blowing process, the blow tube is at this single position. With the blow head and blow tube both in the down position, the parison will be blown and cooled:

"...The blow nozzle, 30 and the blowing head 50, (position B) move downwards. The blowing nozzle, 30, is introduced by the neck of the article E, for blowing or final shaping of the stated article E, while the blowing head, 50, makes contact with the upper part of mold M, to form a pressure chamber during the final blowing of the article."

This is how a blow head works. A closed chamber is defined and with a blow tube located at the parison blow position, pressure is turned on and the parison is blown into a bottle and cooled.

In Rodriquez-Wong, when this process is completed (with the blow tube still at the bottom, "the blowing head has an upward movement . . . while the nozzle 30 keeps supplying air to the recently formed bottle". Rodriquez-Wong is pointing out that unlike conventional blow heads, this combined takeout/blowhead does not raise the blowhead with he blowhead since the blow tube can remain in the down position until the take out tongs of the combined blowhead/takeout close around the formed bottle. Following blow head retraction, the molds are opened, the grippers of the takeout are closed below the finish of the formed bottle, and the blow tube is then retracted to its up position:

"the blow mold . . . opens and the tongs . . . close around the neck of the container . . . while the nozzle . . . carries out an upward movement disengaging itself from the neck of the container."

While Rodriquez-Wong does not say when air is turned off, such final blow air is conventionally turned off before the blow tube is elevated since air costs money and since noise is an issue within the glass plant. Air normally remains off until the blow head again is located on top of the blow molds. Air would only be applied in Rodriquez-Wong when the blow tube is at the down position.

Rodriquez-Wong accordingly discloses a conventional blowhead-blowtube wherein the blow tube has a single operating position - the blow tube down position. Air will be turned on and off at this position. The blow tube does not oscillate during the time when the parison is blown and cooled.

II. Virog

The examiner also cites Virog, which is a plastic injection molding machine. Yes, the word used is parison and yes the parison is blown, but how Virog operates and why it would be relevant to a man skilled in the I.S. machine art where bottles are made from gobs of molten glass is not appreciated by applicant. First Virog extrudes the plastic parison, which is open at the bottom. It is not in the molds yet. It is simply hanging. Virog states that "air outlet nozzle 12 directs air upwardly and outwardly against the parison. The air, having nowhere else to go, must then flow downwardly and out of the lower end of the parison." At this point air flow is simply for helping to maintain the existing shape of the hanging, formed, open at the bottom, parison. At some subsequent time the Virog molds are displaced together to engage the extrusion and to close it within the molds. Air under pressure is then admitted through the same head to form a plastic bottle within the molds. Every structure and function of Virog relates to this plastic injection molding process, which has nothing in common with the process for making a glass bottle in an I.S. machine.

In Virog, there is no discussion of cooling, either of the hanging parison, which is not yet within the molds or of the plastic bottle formed within the closed molds. In Virog, the nozzle does not move between an up blow position and a down position and back up to the up position during the blowing and cooling process. In Virog, the shape of the nozzle is not shaped to have an annular concave surface for redirecting air radially outwardly. Virog appears to have an "O" ring on a vertical shaft.

III. CLAIM 1 IS PATENTABLE

Claim 1 defines a blow head structure of an I.S. machine for blowing a glass parison into a glass bottle and cooling the glass bottle. To this end the claim defines:

"an air deflector having an annular, concave surface terminating at the top with a vertically extending post for deflecting air traveling axially down the blow tube uniformly radially outwardly" so that an annular ring of cooling air will be directed to the hot inner surface of the blown bottle. The blow tube in Rodriquez-Wong is simply open at the bottom. Virog does not define such structure.

Claim 1 also requires that the blow tube which has an up position and a down position, be displaced

"from the up position down to the down position and then back up to the up position at least one time during the time the parison is blown and cooled".

Rodriquez-Wong has a blow tube that is at the down position when blowing begins and at the same down position when it ends (assuming that final blow air is turned off when it is conventionally turned

off). The blow tube does not oscillate during the time when the parison is blown and the formed bottle is cooled.

What teaching in Virog is pertinent to the subject invention. Virog's air flow is for shaping a hanging extruded parison for a plastic bottle. In Virog air flow is not radially outwardly - it just goes upwardly and outwardly and down the wall of the parison. The air flow in the subject invention is for cooling a blown glass parison in an I.S. machine. In the present application the intended air flow is "radially outwardly". Air flow in the parison is upwardly to the open top since the bottom of a blown glass parison is closed. Virog does not disclose an annular concave surface. As far as applicant can determine, most of the inlet is filled with a central rod to which an annular "o" ring is located for whatever purpose.

Virog, clearly, does not teach anything applicable to the invention claimed herein. Clearly, the claimed subject matter is patentable.

Accordingly, the examiner's rejection of claim 1, should be presently reversed.

Respectfully submitted,

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APPENDIX

CLAIMS:

1. A blow head mechanism for blowing a parison in a blow mold of a blow station of an I.S. machine and cooling the blown parison so that a bottle will be formed which can be removed from the blow station comprising

a blow head assembly,

support means for supporting said blow head assembly,

first displacement means for displacing said support means to displace said blow head assembly between a remote up position and an advanced down position,

said blow head assembly including a blow tube selectively displaceable between an up position and a down position,

second displacement means for displacing said blow tube from the up position down to the down position and then back up to the up position at least one time during the time the parison is blown and cooled,

said blow tube being open at the bottom,

an air deflector having an annular, concave surface terminating at the top with a vertically extending post for deflecting air travelling axially down the blow tube uniformly radially outwardly and

a supporting frame for supporting said air deflector proximate the open bottom of said blow tube.

2. A blow head mechanism for blowing a parison in a blow mold of a blow station of an I.S. machine and cooling the blown parison so that a bottle will be formed which can be removed from the

blow station according to claim 1, wherein said supporting frame supports said vertically extending post coaxial with the axis of the blow tube.

3. A blow head mechanism for blowing a parison in a blow mold of a blow station of an I.S. machine and cooling the blown parison so that a bottle will be formed which can be removed from the blow station according to claim 2, wherein the open bottom of said blow tube has an annular recess and said supporting frame includes an annular flange to be press fit into the annular recess and a plurality of struts connecting the top of the vertically extending post to said annular flange.

4. A blow head mechanism for cooling a formed bottle comprising

a blow head assembly,

support means for supporting said blow head assembly,

first displacement means for displacing said support means to displace said blow head assembly between a remote up position and an advanced down position,

said blow head assembly including a blow tube selectively displaceable between an up position and a down position,

second displacement means for displacing said blow tube from the up position down to the down position and then back up to the up position at least one time during the time the bottle is cooled,

said cooling tube being open at the bottom,

an air deflector having an annular, concave surface terminating at the top with a vertically extending post for deflecting air travelling axially down the blow tube uniformly radially outwardly and

a supporting frame for supporting said air deflector proximate the open bottom of said blow tube.